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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,269	04/26/2000	Barry M. Nolte	777.344US1	2518

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EXAMINER

GROSS, KENNETH A

ART UNIT

PAPER NUMBER

2122

DATE MAILED: 10/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/560,269	Applicant(s) NOLTE, BARRY M. M	
	Examiner Kenneth A Gross	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-3, 10, 16-18, 25, 31-33, and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Angel et al (U.S. Patent Number 6,314,558).

In regard to Claim 1, Angel teaches the following: determining a set of probe locations in an application (Column 3, lines 16-20); and inserting probes only at determined probe locations in the application (Column 3, lines 16-20). Claims 16 and 31 are claims that directly correlate with claim 1 and are rejected for the same reasons as Claim 1.

In regard to Claim 2, Angel teaches determining entry and exit points of a plurality of functions constituting at least part of the application (Column 3, lines 20-22). Claims 17 and 32 are claims that directly correlate with claim 2 and are rejected for the same reasons as Claim 2.

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In regard to Claim 3, Angel teaches identifying the entry and exit points as probe locations at which probes are to be inserted (Column 3, lines 16-22). Claims 18 and 33 are claims that directly correlate with claim 3 and are rejected for the same reasons as Claim 3.

In regard to Claim 10, Angel teaches using the instrumentation to collect information relating to the execution of the application (Column 32, lines 60-67). Claims 25 and 40 are claims that directly correlate with claim 10 and are rejected for the same reasons as Claim 10.

3. Claims 1, 4, 16, 19, 21, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Grossman et al. (U.S. Patent Number 6,332,213).

In regard to Claim 1, Grossman teaches a method of identifying probe locations and placing probes in an application (See Abstract). Claims 16 and 31 directly correlate with Claim 1 and are rejected for the same reasons as Claim 1.

In regard to Claim 4, Grossman teaches a method of selecting portions of code in which to place instrumentation (Column 19, lines 1-3), said portions corresponding to “operations that cause program variables to become defined or undefined” (Column 19, lines 24-25). These operations are defined in the specification to include “a function call or a return from a function call” (Column 11, lines 52-56). Claims 19 and 34 are claims that directly correlate with claim 4 and are rejected for the same reasons as Claim 4.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 11, 12, 21, 26, 27, 36, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angel (U.S. Patent Number 6,314,558) in view of Grossman (U.S. Patent Number 6,332,213).

In regard to Claim 6, it was shown above that Angel shows a method of placing instrumentation code in entry and exit points of functions. Grossman teaches that it is desirable to place instrumentation code before and after function calls. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to insert a probe in a first location, where said first location is before a function is called and also to insert a probe in a second location, where said second location is at the start of a function that the function call returns to after execution, in order to better instrument the program. Claims 21 and 36 are claims that directly correlate with claim 6 and are rejected for the same reasons as Claim 6.

In regard to Claim 11, it was shown above that Angel teaches the collecting of data from probes from the execution of the application. It would have been obvious to analyze this data after it is collected to generate an application profile, optimize the code, or fix errors in the code. Claims 26 and 41 are claims that directly correlate with claim 11 and are rejected for the same reasons as Claim 11.

Claim 12 is a method step that directly correlates with the method steps of Claims 1, 2, 3, 10, and 11, and is rejected for the same reason as these Claims. Claims 27 and 42 directly correlate with Claim 12 and are rejected for the same reasons as Claim 12.

6. Claims 8, 23, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angel (U.S. Patent Number 6,314,558) in view of Yellin (U.S. Patent Number 5,761,513).

In regard to Claim 8, it was shown above that Angel teaches a method of placing instrumentation code in entry and exit points of functions. Angel further shows placing instrumentation code in the presence of a 'throw' operation (Figure 18 and Column 25, lines 20-34). Angel does not show placing instrumentation code at the beginning and end of a block of code, where the block of code is where the application is directed to in the occurrence of an error. However, Yellin teaches that "an exception handler 100 is a procedure" and is "executed whenever the applicable exception gets thrown during execution" (Column 1, lines 15-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to place instrumentation code at the beginning and end of the exception handling function as taught by Angel, where the exception handling function is a block of code to which execution of an application is directed upon in the occurrence of an error, since this would allow for the collection of data during an exception. Claims 23 and 38 directly correlate with Claim 8 and are rejected for the same reasons as Claim 8.

7. Claims 5, 7, and 9, 13-15, 20, 22, 24, 28-30, 35, 37, 39, and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whygodny (U.S. Patent Number 6,282,701) in view of Miller (U.S. Patent Number 6,438,512) and further in view of O'Donnell (U.S. Patent Number 6,374,369).

In regard to Claim 5, Whygodny teaches a method of monitoring and analyzing a computer program using tracing, where the trace data collected comprises "function calls (including the assembly address of the called function)" and "function return values (including

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function address)” (Column 29, lines 6-9). Whygodny does not teach collecting a stack pointer or a time indicator. O’Donnell, however, does teach collecting starting and ending times before and after a function call (Column 1, lines 45-49). O’Donnell does not teach collecting a stack pointer. Miller, however, does teach monitoring a program’s performance by periodically interrupting program flow, and calling a function that returns a stack (Column 3, lines 10-11). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to configure two probes for monitoring program performance, both probes collecting the addresses of the calling and called function as taught by Whygodny, a stack pointer as taught by Miller, and a time indicator as taught by O’Donnell, since gathering as much data as possible aids in better program analysis. Claims 20 and 35 directly correlate with Claim 5 and are rejected for the same reasons as Claim 5.

In regard to Claim 7, it is again obvious to configure two probes for monitoring program performance, both probes collecting the addresses of the calling and called function as taught by Whygodny, a stack pointer as taught by Miller, and a time indicator as taught by O’Donnell, since gathering as much data as possible aids in better program analysis. Claims 22 and 37 directly correlate with Claim 7 and are rejected for the same reasons as Claim 7.

In regard to Claim 9, it was said above that the ‘block of code’ is best represented as an exception handling function, and thus it would be obvious to configure the probe to collect the address of the exception handling function as taught by Whygodny. It would be further obvious to configure the probe to collect a stack pointer as taught by Miller and a time indicator as taught by O’Donnell, since gathering as much data as possible aids in better program analysis. Claims 24 and 39 directly correlate with Claim 9 and are rejected for the same reason as Claim 9.

Claim 13 is a method step that directly correlates with the method steps of Claims 1, 2, 3, 4, 5, 10, and 11, and is rejected for the same reason as these Claims. Claims 28 and 43 directly correlate with Claim 13 and are rejected for the same reasons as Claim 13.

Claim 14 is a method step that directly correlates with the method steps of Claims 1, 2, 3, 6, 7, 10, and 11, and is rejected for the same reason as these Claims. Claims 29 and 44 directly correlate with Claim 14 and are rejected for the same reasons as Claim 14.

Claim 15 is a method step that directly correlates with the method steps of Claims 1, 2, 3, 8, 9, 10, and 11, and is rejected for the same reason as these Claims. Claims 30 and 45 directly correlate with Claim 15 and are rejected for the same reason as Claim 15.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Gochee (U.S. Patent Number 5,732,272) teaches a method of tracing and recording the execution time of software subroutines.

Guinther (U.S. Patent Number 6,016,466) teaches a method of recording execution time for a portion of software code using timestamps.

Anderson et al. (U.S. Patent Number 5,918,004) teaches a method of monitoring the execution of a program by gathering data collected by instrumentation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Gross whose telephone number is (703) 305-0542.

The examiner can normally be reached on Mon-Fri 7:30-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A Morse can be reached on (703) 308-4789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

KAG
October 2, 2002


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